

(No Model.)

B. CANNON.  
CHURN DASHER.

No. 497,304.

Patented May 16, 1893.

Fig. 1

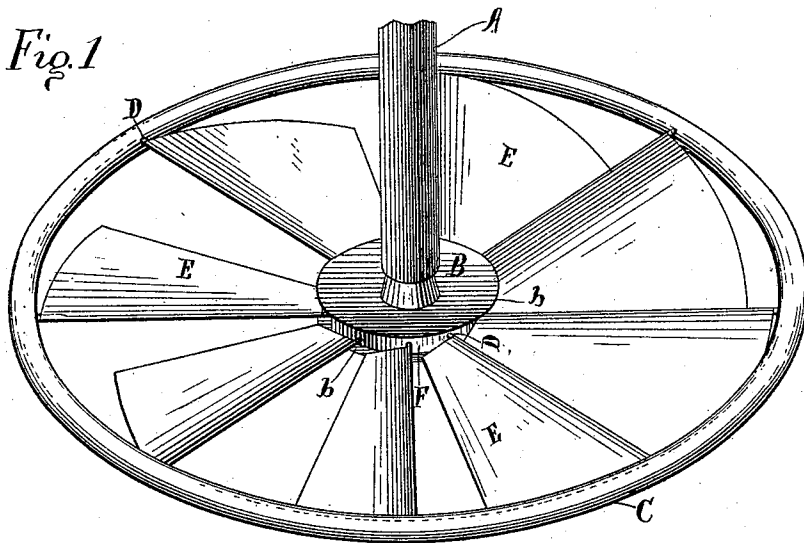


Fig. 2

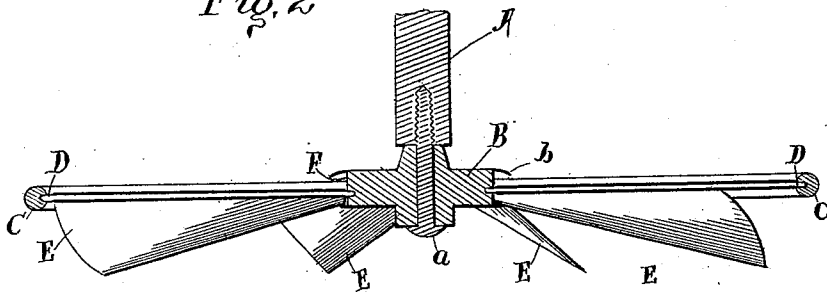


Fig. 3

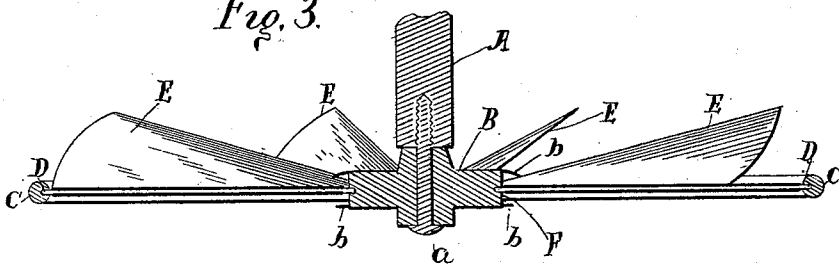


Fig. 4



Witnesses  
H. P. Wilson  
J. K. Griffin

Inventor;  
Burrill Cannon  
By  
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His Atty

# UNITED STATES PATENT OFFICE.

BURRELL CANNON, OF GLADEWATER, TEXAS.

## CHURN-DASHER.

SPECIFICATION forming part of Letters Patent No. 497,304, dated May 16, 1893.

Application filed February 18, 1892. Serial No. 421,922. (No model.)

*To all whom it may concern:*

Be it known that I, BURRELL CANNON, a citizen of the United States, residing at Glade-  
water, in the county of Gregg and State of  
5 Texas, have invented certain new and useful  
Improvements in Churn-Dashers; 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  
10 it appertains to make and use the same, reference  
being had to the accompanying drawings,  
which form part of this specification.

The object of my invention is to provide a  
churn dasher to which a rotary movement  
15 shall be imparted by the resistance offered by  
the fluid to the dasher when the latter is given  
a vertical reciprocating movement in the ordinary  
manner, the rotary movement being  
constantly in one direction, irrespective of the  
20 direction of the vertical reciprocating movement,  
and to this end my invention consists of the  
several details of construction and arrangement  
of parts hereinafter fully set forth in the  
specification and more particularly  
25 pointed out in the claim.

Referring to the drawings: Figure 1 is a perspective  
view of my improved dasher. Figs. 2 and 3, are  
vertical transverse sections of Fig. 1, showing  
respectively the position assumed by the blades  
30 on the upward and downward movements of the  
dasher, and, Fig. 4, is a cross section through  
one of the blades, showing its pivoted connection  
with the journal.

Similar letters of reference indicate corresponding  
parts in the respective figures.

A represents a vertical dasher shaft to the  
lower end of which there is secured a revolving  
horizontal dasher. The hub B. of the  
dasher is formed of cast metal with its upper  
40 central portion projecting and made conical  
in form to lessen its frictional contact with  
the end of the vertical shaft, while its horizontal  
body is cast thick and made to extend  
45 at some distance beyond the lateral diameter  
of the vertical shaft, and is provided on its  
upper and lower edges with a lateral flange  
b, which form an annular recess F. between  
them on the periphery of the hub.

50 Through the vertical center of the hub B.  
there is a hole which loosely receives a screw  
bolt a, which is screwed into the lower end of

the dasher shaft A. bringing only the small  
conical end of the hub in contact with the  
end of the shaft, thereby lessening the frictional  
55 contact and enabling free rotary motion of the  
horizontal dasher, as the lower extended central  
portion of the hub rests on the head of the bolt a.

The horizontal dasher is provided with a  
60 rim C. which is in size much smaller than the  
diameter of the horizontal portion of body of the  
hub B. the rim being only large enough to  
securely hold the ends of the journal rods  
D. radiating from the hub, thereby providing  
65 less surface for resistance and consequently a  
greater number of revolutions of the dasher  
will be made by the same force applied in a  
given time, than where the rim is enlarged or  
is provided with resisting elements for regulating  
70 the movement of the blades.

A series of radial blades E. are hinged on  
the journal rods D. by an overturn of the  
longest side of the blade over the top of the  
rod and bending it around beneath and up  
75 in front of the rod to the lower surface of the  
blade, while the upper surface of the blade  
remains straight as shown in Fig. 4. These  
blades gradually increase in width from their  
inner to their outer ends, as shown, in order  
80 to occupy nearly all the space inclosed between  
the rim and the hub of the dasher.

The ends of the rods D. enter the periphery  
of the hub midway between the flanges b,  
which overhang their ends and the inner ends  
85 of the blades E. It will therefore be apparent  
that the blades E. are free to swing on the  
rods D. upwardly or downwardly from the  
horizontal plane of the rods and that such  
movement will be limited by the flanges b, and  
90 be substantially equal in both directions. The  
blades E. therefore being free to reverse their  
inclination on each reversal of the vertical  
movement of the dasher the resistance offered  
by the fluid to the blades in their upward or  
95 downward movement will tend to rotate the  
dasher in one uniform direction. This movement  
of the dasher will have the effect of imparting  
a reverse movement to the fluid in which the  
dasher is operated and so produce  
100 a strong centrifugal force, which combined  
with the vertical reciprocating action of the  
dasher causes, in the operation of churning,  
a rapid separation of the particles of butter

from the milk, and thereby reducing the length of time necessary to perform this operation to a much shorter period than is usual.

5 Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

10 In a churn the combination with a vertical shaft having a rotary dasher thereon provided with an outer rim, rods secured at one end in the rim and the other end in the hub, and a series of radial blades, having their sides passing over the top and pivoted around the

rods, of a hub having upper and lower lateral flanges forming stops for the inner ends of the blades which extend into an annular recess between the flanges on the periphery of the hub, whereby said blades are free to move in a vertical direction, as set forth. 15

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

BURRELL CANNON.

Witnesses:

T. J. ALLISON,

T. R. HOFFMAN.