

(Model.)

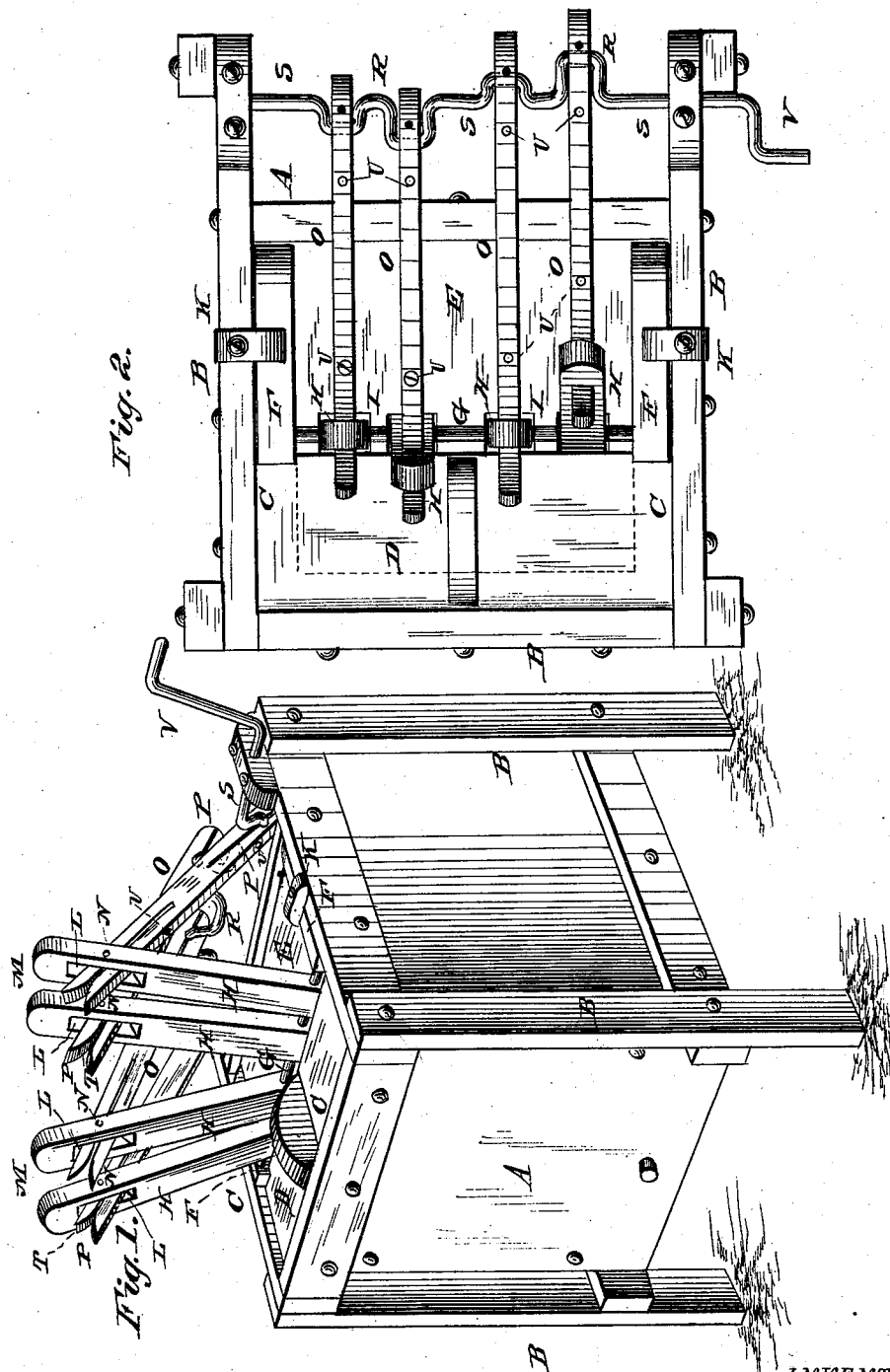
2 Sheets—Sheet 1.

R. CAMPBELL.

CHURN.

No. 260,451.

Patented July 4, 1882.



WITNESSES
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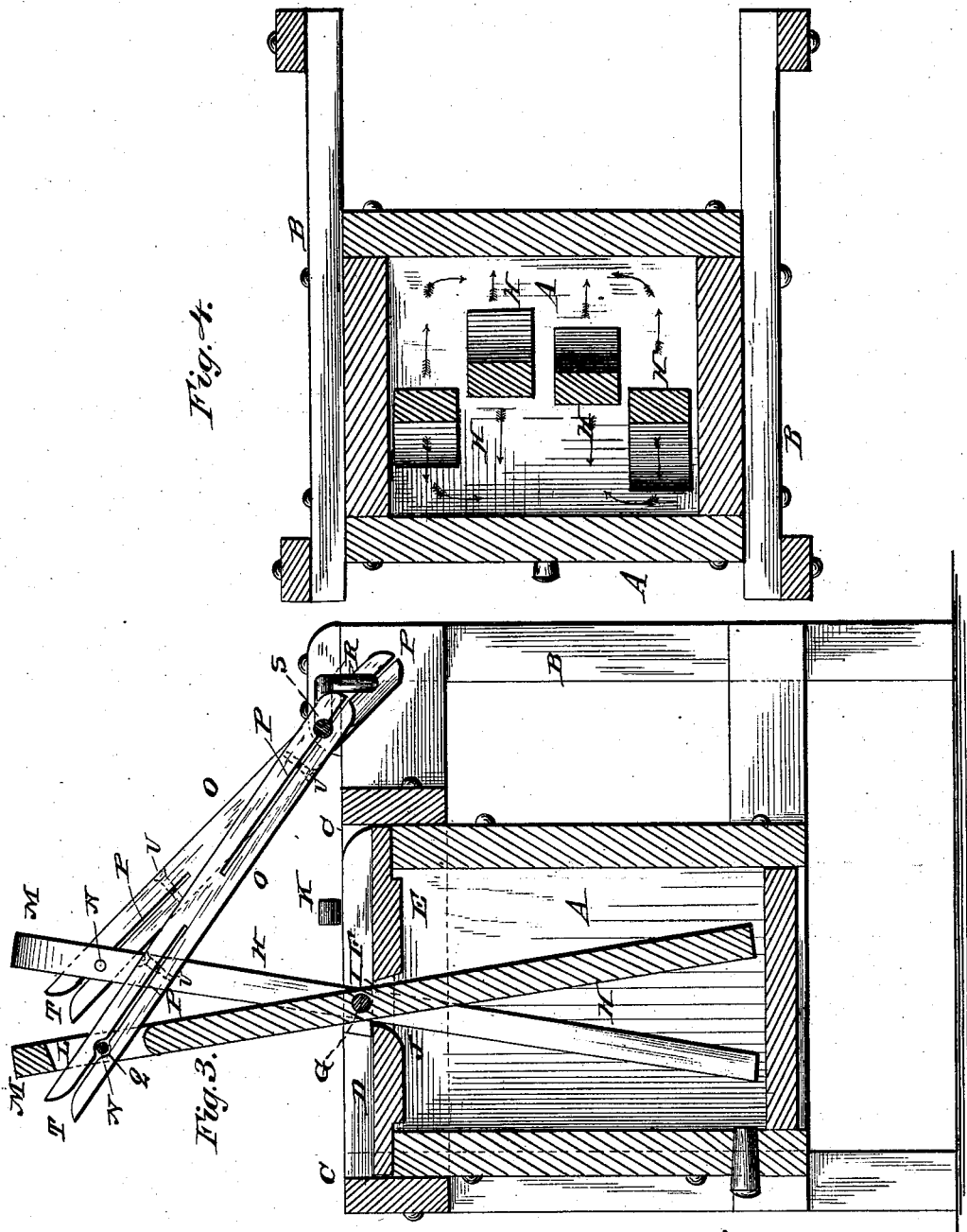
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UNITED STATES PATENT OFFICE.

ROBERT CAMPBELL, OF WOOSTER, OHIO.

CHURN.

SPECIFICATION forming part of Letters Patent No. 260,451, dated July 4, 1882.

Application filed January 25, 1882. (Model.)

To all whom it may concern:

Be it known that I, ROBERT CAMPBELL, of Wooster, in the county of Wayne and State of Ohio, have invented certain new and useful
5 Improvements in Churns; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference
10 being had to the accompanying drawings, which form a part of this specification.

This invention relates to improvements in churns, particularly of that class that employ reciprocatory and vibratory paddles to agitate
15 the cream, and has for its object to lessen the labor of churning and at the same time obtain efficiency, simplicity, and durability of parts.

To this end it consists in certain improvements in the construction and operation of the
20 same, substantially as will be hereinafter more fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view; Fig. 2, a top view; Fig. 3, a vertical
25 longitudinal sectional view, and Fig. 4 a horizontal sectional view.

Corresponding parts in the figures are denoted by the same letters of reference.

Referring by letter to the drawings, A designates a rectangular box, forming the body
30 of my improved churn, mounted in a suitable frame, B, and provided with a spigot or bung at its base. The frame B is so constructed as to form a vertical flange, C, around the mouth
35 of the churn-box, between which flange or wall the two-part cover D E is arranged. The main portion of the cover, E, is provided with projections or shoulders F on top at its sides, in which are formed boxes or bearings for a trans-
40 verse shaft, G, carrying the four paddles or beaters H, pivoted on said shaft at or near their center, so as to leave a considerable portion projecting from the top of the churn-box.

The front edge of the cover E is provided
45 with recesses I for the reception of the paddles, and the projections F are continued a short distance over the front edge, so that when the key-cover D is placed in position its inward edge, J, may be adjusted under the
50 same, which, in connection with buttons K, placed on top the flange C and adapted to be

turned so as to project over the cover E, will firmly lock the whole cover in position.

The paddles or beaters H have longitudinal slots or apertures L formed in their project-
55 ing portions M, at the top thereof, and in these are fitted transverse shafts or pins N.

O denotes four connecting-arms, having their ends split longitudinally, as shown at P, and provided with bearings Q. In practice
60 the split ends of the arms O are adjusted with their bearings Q respectively one over the shafts N in openings L and the other over the cranks R of a transverse shaft, S, journaled on the frame B, in rear of the churn-box, to facili-
65 tate which they may be beveled, as at T.

It will be seen that the spring ends of the connecting-arms thus clasp the shafts N S, the tension on which may be regulated and the wear taken up by adjusting the screws V in
70 the arms at right angles to the split openings. The cranks R on the shaft S are formed each at right angles to the other, as plainly shown in Fig. 2 of the drawings, and at one end a crank or handle, V, or other suitable device or
75 mechanism by which motion may be imparted, is provided. Owing to the right-angular formation of the cranks R, when the shaft S is revolved and motion imparted by means of the connecting-arms O is conveyed to the paddles
80 or beaters H no two of the latter will vibrate or turn upon their axle or shaft G together, but will vibrate successively and alternately in such a manner that with every complete revolution of the shaft S the paddles at each
85 end will impart to the cream a reciprocal and, by the cream striking against the corner of the churn-box and being deflected, a rotary movement, while the two middle or central paddles beat the cream backward and forward, all as
90 indicated by the arrows, Fig. 4 of the drawings.

By reference to the above description, taken in connection with the drawings hereto annexed, the operation and advantages of my
95 invention will be readily understood. It is simple, convenient, and great agitation is imparted to the cream by but little motion of the crank-shaft, and the paddles being perfectly smooth, instead of being split or provided with
100 openings, the grain and globules of the butter are not broken. Another advantage is that

in gathering the butter in the churn-box it is not necessary to remove the paddles entirely out of the latter, as the key-cover may be removed and the main cover elevated to permit the paddles to hang at one side of the churn-box; but should it be desired to disconnect the operating arms from the paddles, so that the cover and paddles can be entirely removed from the churn-box, this can easily be effected by expanding with the thumb or by other means the split ends of the arms, so that they can readily be withdrawn from the shaft. In like manner, should any of the connecting-arms become damaged or broken, they can readily be replaced.

I do not limit myself to the number of paddles or beaters herein shown, as any desired number may be used with advantageous effect.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with the frame forming a vertical flange round the mouth of the churn-

box, of the two-part cover adjusted between said flange, one portion of the cover being provided with projections or shoulders, in which are formed bearings for the transverse paddle or beater shaft, substantially as specified.

2. The combination, with the cover E, provided with projections or shoulders F, forming bearings for a transverse shaft, G, carrying the paddles or beaters H, working in recesses I in the front of the cover, and projecting slightly over the front edge of the cover, of the key-cover D, the inward edge of which is adapted to be adjusted under said projection, substantially as and for the purpose herein shown and specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ROBERT CAMPBELL.

Witnesses:

SOLOMAN R. BONEWITZ,
J. P. VAN NEST.