(No Model.)

J. A. CRIM.

CHURN.

No. 528,079. Patented Oct. 23, 1894.

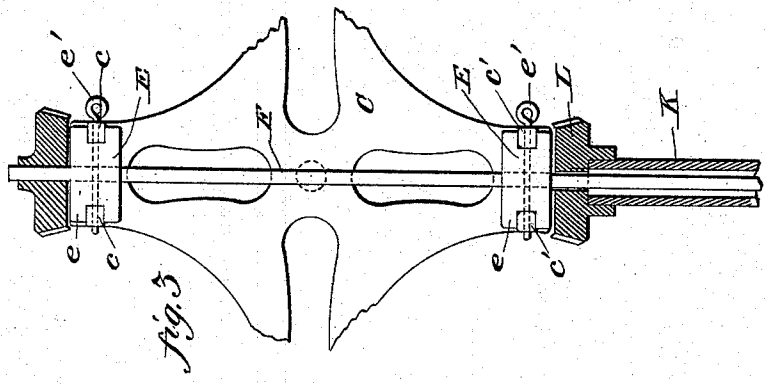

Fig. 3

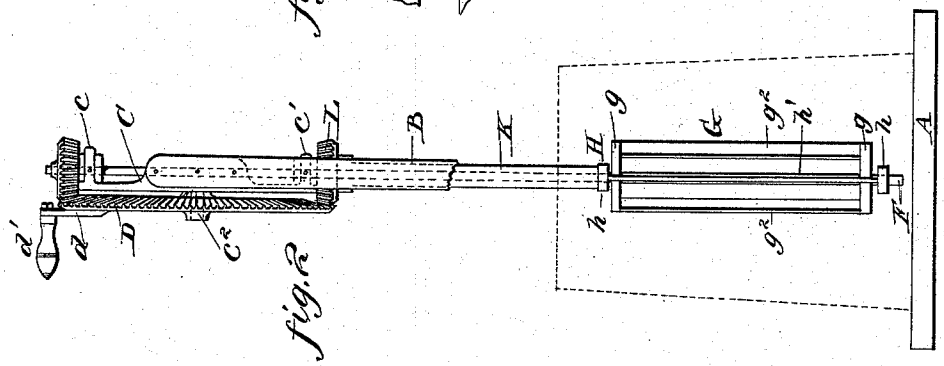

Fig. 2

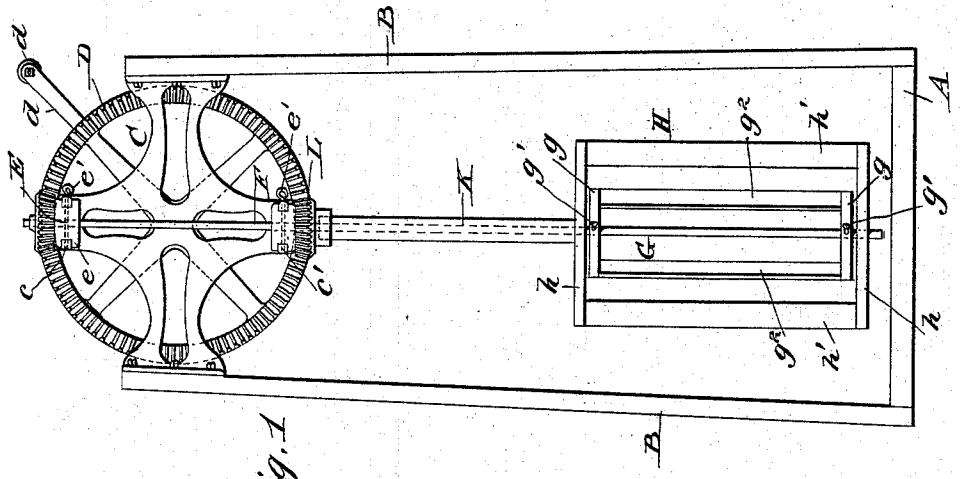

Fig. 1

Witnesses;

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CHURN.

SPECIFICATION forming part of Letters Patent No. 528,079, dated October 23, 1894.

Application filed March 22, 1894. Serial No. 504,585. (No model.)

To all whom it may concern:

Be it known that I, JACKSON A. CRIM, a citizen of the United States, residing at Plainville, in the county of Adams and State of Illinois, 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 improvements in churn operating mechanism and has for its object to produce a simple, efficient and cheap device of the kind.

The invention will first be described in connection with the accompanying drawings, and then particularly pointed out in the claims.

In the drawings—Figure 1 is a side elevation of a churn dasher and operating mechanism embodying my invention. Fig. 2 is an elevation at right angles to Fig. 1, with one of the standards broken away, the churn-barrel being indicated in dotted lines. Fig. 3 is a detail view illustrating the boxings and the manner of removably securing them to the frame.

Referring to the drawings, A is a stand or base-plate from which rise two standards B united at the top by a frame C, preferably of cast iron. This frame has two vertical and two horizontal arms, the latter being bolted to the standards, while the former are provided with laterally-extending forks *c* and *c'*, one on each vertical arm.

To the center of the frame C is secured a stud c^3 on which is revolubly mounted a bevel spur wheel D to which is secured a crank arm *d* having the usual crank-handle *d'*.

In each fork *c* and *c'*, is placed a removable journal-box E which has flanged edges *e* overlapping the forks, as shown, in order to retain the boxes in place. To prevent the boxes from sliding outward, the ends of the forks are provided with pin-holes through which are passed pins *e'* thereby holding the boxes firmly in place, yet permitting them to be readily removed by withdrawing the pins *e'*.

In the boxes E is journaled a main dasher shaft F which is provided at its upper end with a bevel gear pinion meshing into the bevel spur wheel D, and fixed to the said dasher shaft.

On the outer end of the dasher shaft F is fixed an inner dasher G, composed of two transverse bars *g* through which the shaft F is passed, the bars, *g*, being secured to the shaft F by means of set screws *g'*. The ends of the said bars, *g*, are united by wings g^2.

Immediately above and below the upper and lower transverse bars, *g*, respectively, are located transverse bars, *h*, which are connected at their ends by wings *h'*, the said bars *h* and the wings *h'* forming the outer dasher H. This dasher is loosely mounted on the main dasher shaft F and is connected to an outer dasher shaft K, which is tubular and is free to revolve on the shaft F. The upper end of the shaft K is squared and is inserted into a square socket formed on the lower face of the bevel gear pinion L which rotates on the shaft F.

In using my apparatus the pins *e'* are withdrawn and the dasher shaft together with the boxes E are removed, when the churn-barrel is placed on the stand, as indicated in dotted lines in Fig. 2, and the dashers then inserted into the barrel, the boxes E being returned to their places in the forks, where they are secured by replacing the pins *e'*. If now the crank be turned, the bevel spur wheel will revolve the bevel gear wheels, but in opposite directions, thus rotating the dashers in opposite directions, also. By swinging the crank through half a revolution and then back, an oscillating motion will be imparted to the dashers, this motion being desirable sometimes in churning.

It will be observed that by my construction, an exceedingly simple rotary churning mechanism is produced, in which all the parts are easily cleaned or repaired and are strong. By extending the frame C vertically the shaft F is held securely against springing.

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

1. In a churn, the combination, with a frame, a pair of forks secured to the frame, and a pair of boxes provided with flanges and inserted in the forks, of a dasher-shaft journaled in the boxes, and a pin inserted through

each fork, whereby the dasher-shaft is removable from the frame, substantially as described.

2. In a churn, the combination, with a stand, a pair of standards secured to the stand, a frame provided with vertical and horizontal arms, the latter being attached to the standards, a fork carried by each vertical arm, a stud extending from the center of the frame, and a bevel spur gear wheel revoluble on the stud, a crank secured to the spur wheel, a journal box mounted in each fork, a pin through each end of each fork, a main dasher shaft journaled in the boxes, a bevel gear pinion fixed on the main dasher shaft and meshing with the spur-wheel, a bevel gear pinion loose on the main dasher shaft and meshing with the spur wheel, the lower side of the loose bevel gear pinion having a square socket, a tubular dasher shaft revoluble on the main dasher shaft and having its upper end fixed in the socket in the loose bevel pinion, an inner dasher secured to the main dasher shaft, and an outer dasher secured to the tubular dasher shaft, substantially as described and for the purpose set forth.

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

JACKSON A. CRIM.

Witnesses:
S. S. INMAN,
J. B. MCRAE.