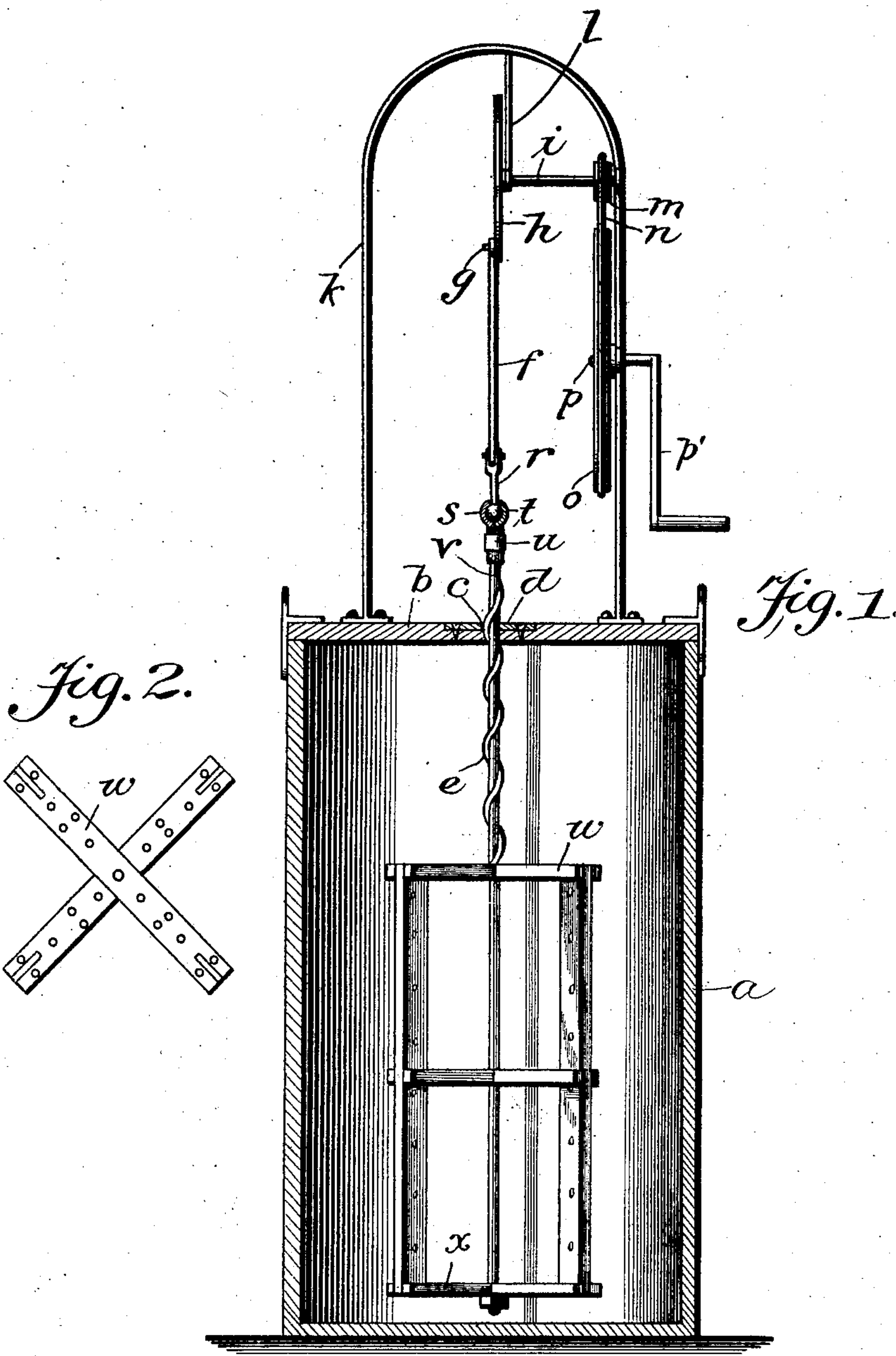


No. 845,527.

PATENTED FEB. 26, 1907.

C. L. COOK.
CHURN.

APPLICATION FILED JUNE 26, 1899.



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UNITED STATES PATENT OFFICE.

CLAYTON L. COOK, OF BIG PLAIN, OHIO.

CHURN.

No. 845,527.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed June 26, 1899. Serial No. 721,987.

To all whom it may concern:

Be it known that I, CLAYTON L. COOK, a citizen of the United States, residing at Big Plain, in the county of Madison, State of Ohio, 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 churns, and has for its object to provide a device of this nature which will be simple and effective in its operation, which will have a combined oscillatory and reciprocatory motion, and in which the dasher will be specially constructed to utilize these movements to the best advantage.

In the drawings forming a portion of this specification, and in which like letters of reference indicate similar parts in the several views, Figure 1 is a front elevation of a churn constructed in accordance with my invention, and Fig. 2 is a plan view of the dasher.

Referring now to the drawings, in operating in accordance with my invention I provide a body *a* of any desired form, preferably cylindrical, upon the upper end of which I arrange a liquid-tight cover *b*, having a central perforation. In alinement with the perforation in the cover of the body is the perforation *c* of a plate *d*, secured to the cover either upon its outer or its inner face. This last-named perforation is screw-threaded, with a steep pitch to receive a similarly-threaded rod *e*, having a ball-and-socket connection with a pitman *f*, whose head forms a bearing for a crank-pin *g* upon a wheel *h*, mounted upon the inner end of a shaft *i*, which turns in suitable bearings in a supporting-arch *k*, secured to the cover of the body and extending upwardly therefrom. The shaft *i* has also a bearing in a hanger *l*, depending from the arch *k*. Upon the shaft *i* is also mounted a pulley-wheel *m* at the opposite side of the hanger from the wheel *h* and adapted to receive a belt *n*, extending to and engaging a band-wheel *o* upon a shaft *p*, journaled in the portion of the arch *k* in which the shaft *i* is journaled, said shaft *p* having a crank *p'* at its outer end for rotating the shaft.

The ball-and-socket connection above referred to may be of any preferred construction and I have shown the ball element upon the end of a short link *r*, pivotally connected with

the pitman *f*, which ball is inclosed by two jaws *s* and *t*, each having a downwardly-extending shank semicircular in cross-section and lying with their flat faces in mutual engagement, the rounded surfaces being screw-threaded to receive a collar *u*, which is engaged therewith. Entering the collar *u* is also the threaded upper end of the dasher-rod *e*, which passes downwardly through the perforation *c* in plate *d*, said rod having a thread corresponding to that of the said perforation and extending a distance slightly greater than the throw of the dasher.

Upon that portion of the rod *e* with the body of the churn is a dasher comprising upper and lower slats *w* and *x*, respectively, the upper slats lying at right angles to each other in a horizontal plane and the lower slats lying also at right angles to each other and in a horizontal plane, the corresponding upper and lower slats lying in the same vertical planes.

Intermediate the upper and lower elements of the dasher just described is a third element lying intermediate the upper and lower elements, similar in form and arrangement, the three elements being so positioned as to receive through their slotted ends vertically-arranged slats whose major lateral dimensions lie radially of the dasher.

Transversely of the vertical slats *x* are arranged perforations, similar perforations being formed in each horizontal slat at each side of the slot in its end and also between the ends thereof. Thus it will be seen that as the crank *p'* is operated rotary motion will be communicated to the shaft *i*, causing revolution of the crank-pin upon wheel or disk *h*, thus causing the pitman to reciprocate and give a similar motion to the link *r*. The motion of link *r* is transmitted to the rod *e* through the medium of the ball-and-socket joint, the vertical movement of said rod *e* through the threaded perforation in plate *d* causing a rotation of said rod in one direction as it ascends and the other direction as it descends, resulting in an oscillatory movement of the dasher in addition to a vertical reciprocatory movement. The perforations in the different elements of the dasher allow the passage of the contents of the churn-body, resulting in a speedy conclusion of the churning operation.

It will be readily understood that I may apply my invention to any style of body to which it is adapted and that I may vary the

specific constructions and arrangement herein shown and described; also, that I may employ whatever material I may deem proper in its manufacture without departing from the spirit of my invention.

5 Having thus described my invention, what I claim is—

10 In a churn, the combination with a hollow body portion, of a supporting-arch secured upon the body portion, a shaft journaled in one side of the arch, an operating-crank carried by the outer end of the shaft, a band-wheel carried by the inner end of the shaft, a depending hanger carried by the top of the
15 arch, a shaft journaled in the hanger and in the side of the arch in which the first-named shaft is journaled, a pulley-wheel carried by the second-named shaft, a belt engaged with the pulley-wheel and with the band-wheel, a
20 wheel mounted upon the inner end of the first-

named shaft, a pitman eccentrically pivoted upon said wheel, a link pivoted to the lower end of the pitman, a ball carried by the lower end of the link, jaws in which the ball is engaged, a threaded rod carried by the jaws and
25 extending downwardly therefrom, said body portion having an opening in its top in which the rod is slidably engaged, a plate having a threaded opening disposed with its opening
30 in alinement with that of the top, said rod being engaged in the threaded opening, and a dasher carried by the rod within the body portion.

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

CLAYTON L. COOK.

Witnesses:

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