(No Model.)

2 Sheets—Sheet 1.

J. F. KOMP.

TEST CHURN.

No. 354,065. Patented Dec. 7, 1886.

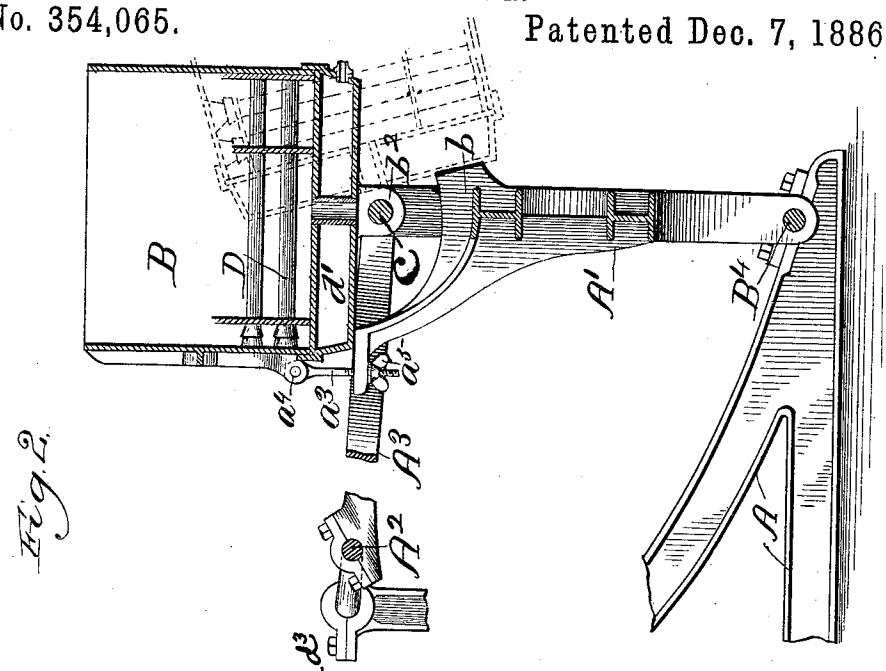


Fig. 2.

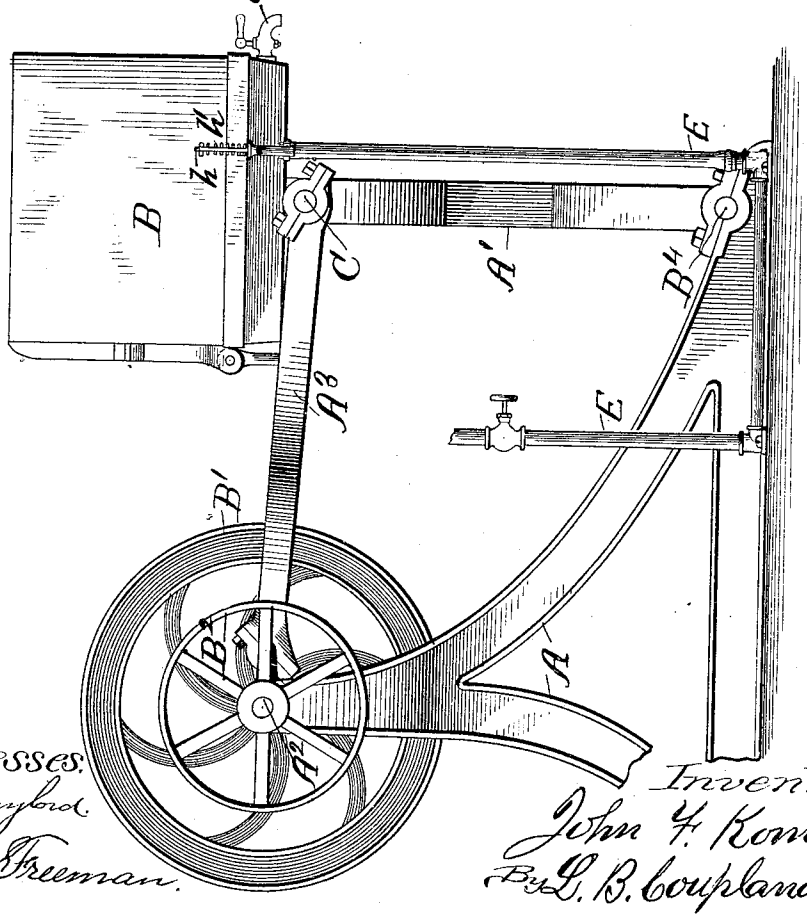


Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

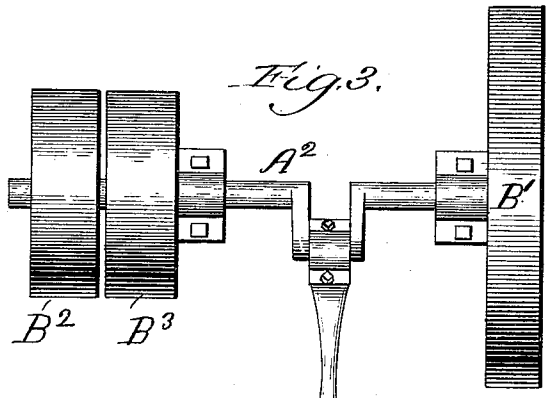


Fig. 4.

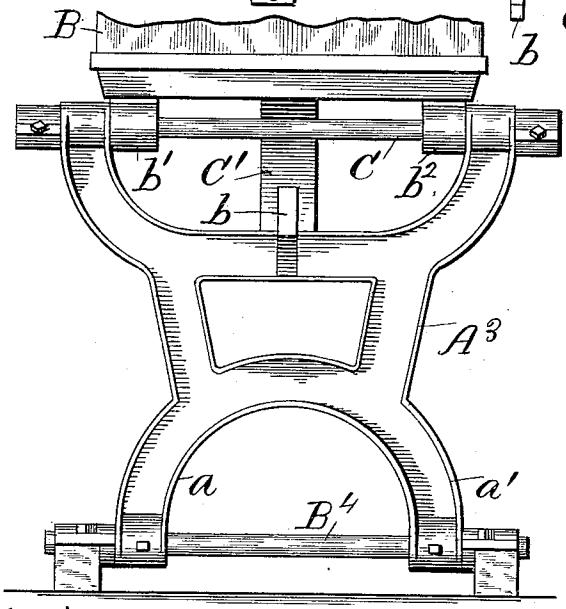
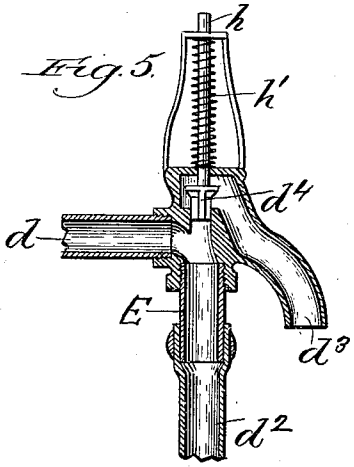


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN F. KOMP, OF CHICAGO, ILLINOIS, ASSIGNOR TO DAVIS & RANKIN, OF SAME PLACE.

TEST-CHURN.

SPECIFICATION forming part of Letters Patent No. 354,065, dated December 7, 1886.

Application filed June 29, 1886. Serial No. 206,069. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. KOMP, of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Cream-Testing Churns, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in that class of churns employed in testing samples of cream taken from different lots for the purpose of ascertaining the butter value of each lot separately.

The nature of this invention consists in providing means whereby the churn-box holding the test-tubes may be tipped up to a vertical position, or nearly so, after the churning and heating processes are completed, to admit of the removal of said tubes without losing a portion of the contents thereof; and it also further consists of a peculiar construction and arrangement of mechanism for imparting the desired oscillating motion to the churn, all as will be hereinafter set forth in detail, and pointed out in the claims.

Figure 1 is a side elevation embodying my improved features; Fig. 2, a vertical section; Fig. 3, a plan of the oscillating mechanism, the churn-box being removed; Fig. 4, a front elevation with the lower part of churn-box in position, and Fig. 5 an enlarged sectional detail of the heating-connection.

In the drawings, A represents the two triangular side pieces of the supporting frame-work, and A′ the front part; A^2, the crank-shaft; A^3, the connecting-rod, and B the churn-box.

The two pieces A, composing the sides of the frame-work, are of the triangular form shown in Fig. 1, the crank or driving shaft A^2 being provided with bearings in the top of the same, and having the fly-wheel B′ and the band-pulleys B^2 B^3 mounted thereon.

B^4 is a rock-shaft located near the floor, and is provided with bearings in the lower front ends of the side pieces composing the frame. The two downwardly-projecting legs a a' of the front part, A′, of the frame-work are rigidly secured on the shaft B^4 near the ends, as shown in Fig. 4, the part A′ of the frame oscillating with the shaft. The two upwardly-extending arms x x of the part A′ are rigidly secured to and encircle the shaft C, which is located underneath the churn-box. The front ends of the bifurcated connecting-rod A^3 are attached to and have oscillating bearings on the extreme ends of the shaft C, as shown in Figs. 3 and 4. The part A′ of the supporting-frame is also provided with the inwardly and upwardly projecting bracket-arm C′, which forms a base-support for the back part of the churn-box B, as shown in Fig. 2.

The upper end of the bracket-arm C′ is provided with the slot a^2, (see Fig. 3,) for the insertion of the locking-bolt a^3, the upper end of which is pivoted to the lug a^4, cast on the side of the churn-box. The lower threaded end is provided with the thumb-nut a^5, by which means the churn-box is clamped and locked in a horizontal position for churning; or, by slacking down on the nut and throwing the bolt out of the slot, the churn may be tipped forward to the position indicated by the dotted lines in Fig. 2, and rested against the projection b, formed on the front side of the frame A′.

The churn-box is mounted on the shaft C by means of the pivotal lugs b' b^2, formed on the under side of the same, (see Fig. 4,) which arrangement readily permits of the box being converted from a horizontal to an inclined or vertical position, so that the test-tubes D may be removed without losing any of their contents. The test-tubes are ordinarily made of light glass, and are therefore of a very fragile nature, and require careful handling in removing them from the churn-box.

As many test-tubes are used as there are different lots of cream, and when each tube has received its particular sample it is corked and secured in the churn-box in a horizontal position, and then subjected to the heating and churning process. It was found in practical working that in removing the tubes from the churn-box the stopples would be suddenly forced out by the accumulation of gases formed in heating and in churning and a portion of the contents lost before the tube could be brought to a vertical position, thus making it impossible to obtain the butter value or percentage of each sample. Now, by bringing

the churn-box to a vertical position before removing the test-tubes for examination, this difficulty is overcome. Not that this feature will have the effect of preventing the stopples from flying out, but it will prevent any portion of the contents from following the same.

Steam is supplied to the churn-box through the pipe E, the branch d leading into the heating or water compartment d' of the churn.

d^2 represents a flexible joint composed of a piece of rubber tubing, which permits of the churn-box being readily converted from one position to the other.

d^3 is a branch relief, (see Fig. 5,) through which an excess of pressure may escape, the communication between the supply and relief passages being opened and closed by the valve d^4 on the lower end of the stem h. When the pressure exceeds a fixed limit, the valve is forced upward and the excess allowed to escape, the spring h' forcing the valve down and closing the passage when the pressure is reduced, thus maintaining a uniform pressure.

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

1. A supporting-frame for test-churns, consisting of the triangular sides A and the oscillating front part, A′, in combination with the crank-shaft A^2, the connecting-rod A^3, the rock-shaft B^4, and the shaft C, on which the churn-box is mounted, all combined and arranged to operate as set forth.

2. In combination with the supporting-frame and operating mechanism, the oscillating front part, A′, having the bracket-arm C′, the shaft C, the churn-box B, provided on the under side with the pivotal lugs b' b^2, whereby said churn-box may be brought to an inclined position, and the means described for locking said churn-box in a horizontal position, substantially as and for the purpose set forth.

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