

(No Model.)

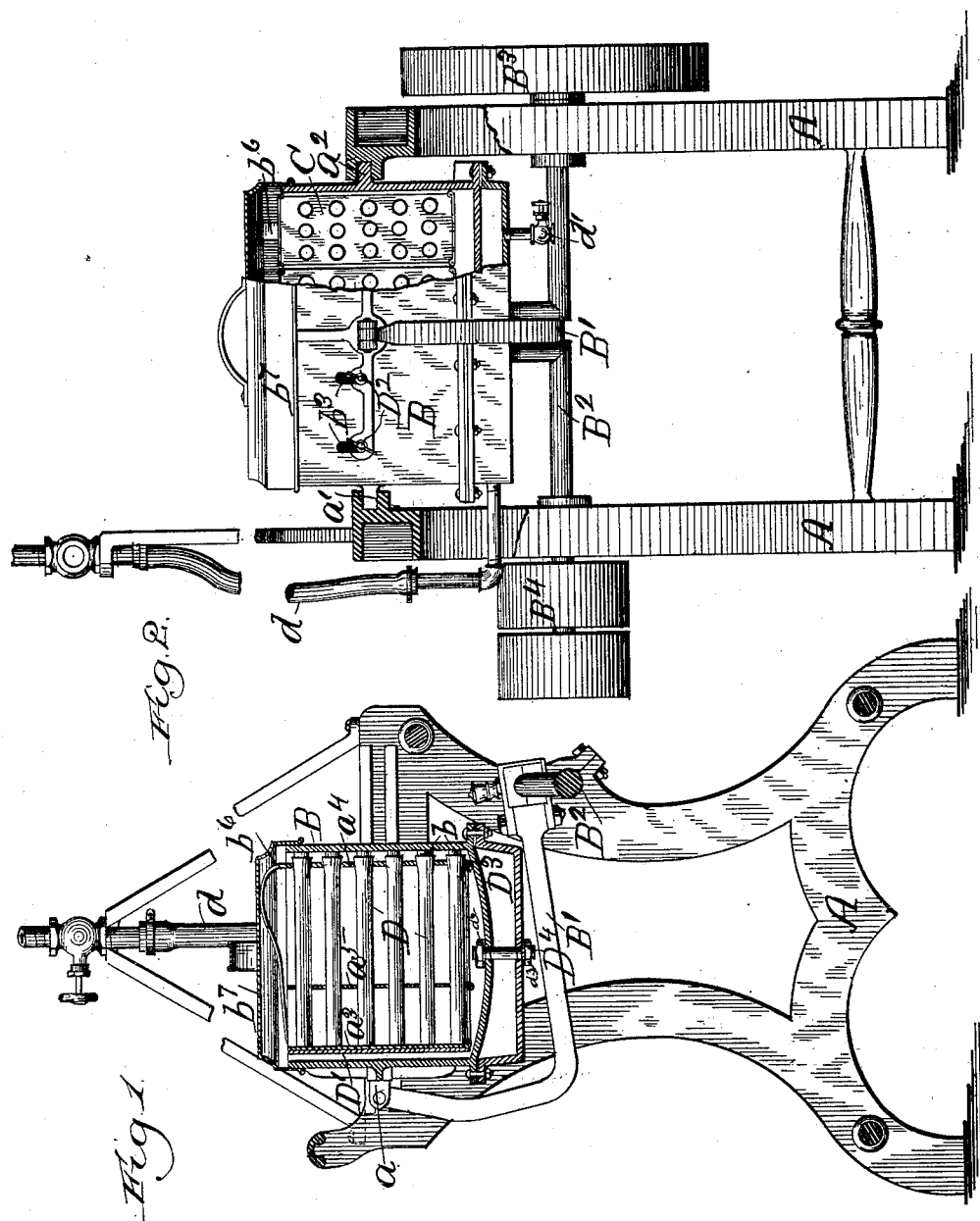
2 Sheets—Sheet 1.

J. F. KOMP.

CREAM TESTING CHURN.

No. 346,051.

Patented July 20, 1886.



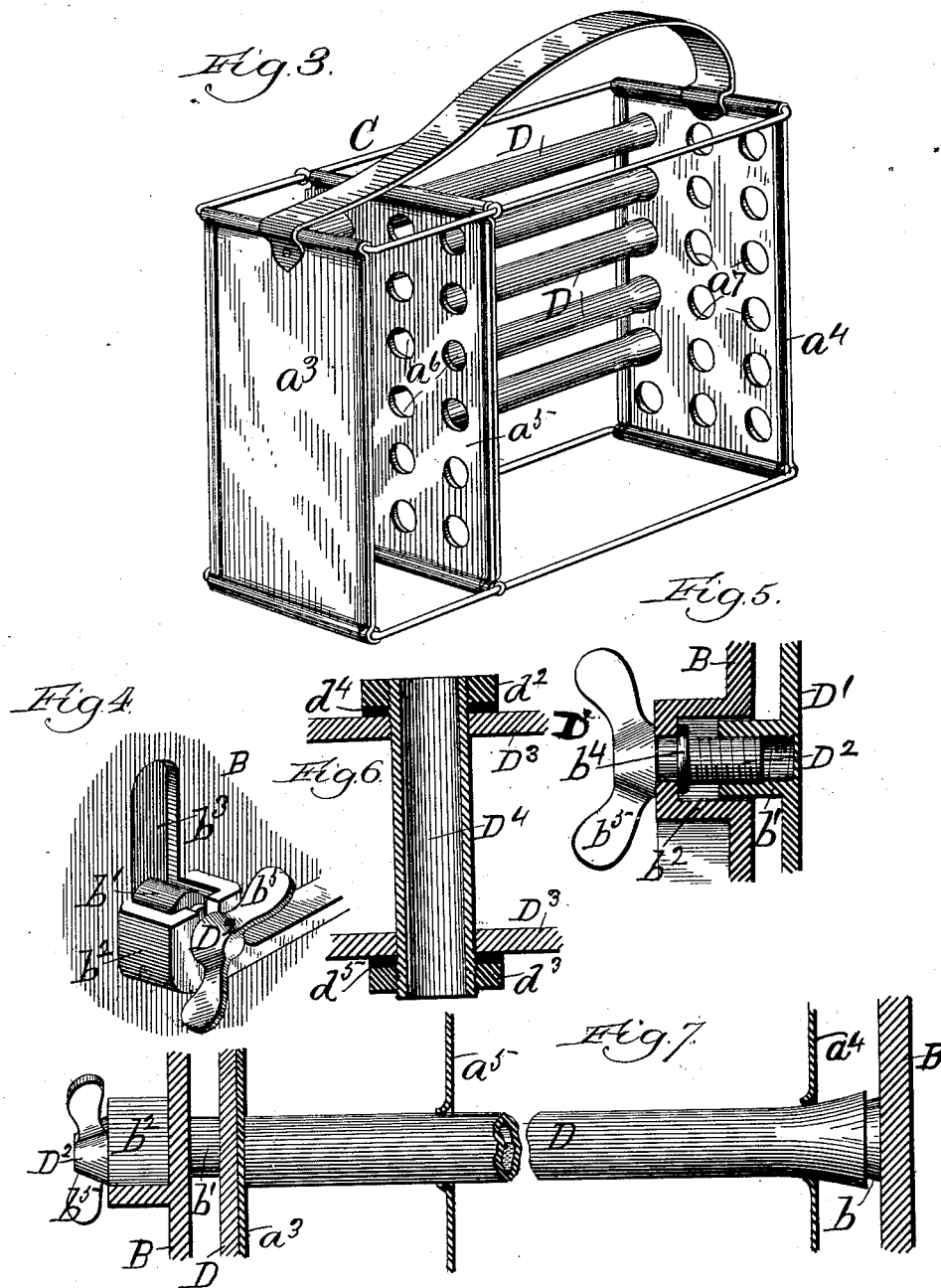
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UNITED STATES PATENT OFFICE.

JOHN F. KOMP, OF CHICAGO, ILLINOIS, ASSIGNOR TO DANIEL J. DAVIS
AND THOMAS RANKIN, BOTH OF SAME PLACE.

CREAM-TESTING CHURN.

SPECIFICATION forming part of Letters Patent No. 346,051, dated July 20, 1886.

Application filed November 16, 1885. Serial No. 183,016. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. KOMP, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Cream-Testing Churn, 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 an apparatus designed to churn and test samples of cream taken from different lots; and it consists of certain novel features in the construction and combination of parts, as will be hereinafter set forth.

Figure 1 is a vertical transverse section of an apparatus embodying my improved features; Fig. 2, a side elevation and partial section; Fig. 3, a view in perspective of a removable case adapted to hold the test-tubes. Figs. 4, 5, 6, and 7 are detached details.

Referring to the drawings, A represents the supporting-frame, which may be of any desired form or design.

The reciprocating box or receptacle B will be ordinarily constructed of cast-iron; but any other material suitable for the purpose may be used. This forms the churn-box proper, and the required reciprocating movement is imparted to the same through the medium of the angular connecting-rod B' and the double-crank shaft B², which is provided with suitable journal-bearings in the supporting-frame. B³ is a balance-wheel mounted on one end of said shaft, and B⁴ a driving-pulley mounted on the opposite end, as illustrated in Fig. 2. One end of the angular rod B' is connected to the lug a on one side of the churn-box, and the opposite end to the double-crank shaft.

The ends of the churn-box are provided with the oscillating bearings a' a², as shown in Fig. 2.

The removable test-case C consists of a frame-work of wire and the ends a³ a⁴. This case is open on the sides, (see Fig. 3,) and is adapted to be placed on the inside of the churn-box, as shown in Fig. 1.

a⁵ is an adjustable diaphragm supported on the top and bottom wires of the case C, and nearer to one end than to the other, as shown in Figs. 1 and 3. This diaphragm is provided with the numerous perforations a⁶, while the end a⁴ of the case is provided with corresponding perforations, a⁷. The series of glass test-tubes D are inserted and supported horizontally in the perforated parts. (See Figs. 1 and 3.)

There is space left between the inclosing sides of the churn-box and the case C, so that when the latter is placed in position the stoppers b, inserted in the open flaring ends of the test-tubes, bear against one side of the churn-box, (see Figs. 1 and 7,) while the opposite ends of said tubes bear against the imperforated end a³ of the case.

D' is an adjustable swiveled clamping-plate, the inner side of which bears against the outer side of the end a³ of the case C. The outer side of the plate D' is provided with the internally-threaded hub b', as shown in Figs. 5 and 7.

D² is an adjusting screw-bolt having a threaded connection with the hub b' on the plate D'. (See Fig. 5.) The box lug b² is formed on the outside of the churn-box, and provides a bearing for the screw D². This box-lug is open on the top, as shown in Fig. 4, so as to conveniently permit of the removal of said screw from the hub by raising these parts upwardly in the elongated slot b³. The collar b⁴ and the rigid head b⁵ prevent an endwise movement of said screw-bolt, the clamping-plate moving in or out as the screw is rotated. The function of this clamping-plate is to lightly clamp the test-tubes in place when brought to a bearing against the imperforated end of the case C, which will spring sufficiently for the purpose. This arrangement not only secures the test-tubes, but also prevents all possibility of the stopper escaping from the same.

One or more test-cases may be used in the same receptacle, as shown by the broken-away part, Fig. 2, for the purpose of facilitating the handling of the same, a separate clamping-plate being used for each case. The handle

b^6 provides means for lifting the case out of the receptacle, and the cover b^7 tightly closes the same.

The heating and warming reservoir or chamber D^3 is located underneath the churn-box, and is supplied with steam or hot water through the connection d , the water being discharged, as may be required from time to time, through the waste-valve d' . The temperature in the churn-box may be reduced by removing the cover and letting in a jet of cold water, which will escape through the tube D^4 , (see Figs. 1 and 6,) inserted in the center of the warming-reservoir and secured in place by the screw-nuts d'' d''' , and a tight joint formed at each end by the interposed packing-rings d^4 d^5 .

In practical working the test-tubes first receive a sample of cream from each lot, there being as many tubes used as there are different lots to be tested. The tubes are next placed in the churn-box, and the same warmed to the proper temperature, and then churned, after which the temperature is increased sufficiently to separate the oil of butter from the curd and whey, when the exact quantity of oil in each tube or sample is accurately known. This arrangement requires but a small sample from each lot of cream, and the process of testing the same is easily and quickly performed.

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

1. The combination, with the oscillating churn-body, of a removable case having one

perforated and one imperforated end, and provided between said ends with an adjustable perforated diaphragm, and means, substantially as described, for clamping the case in said churn-body, for the purpose set forth.

2. The combination of a churn body, mechanism for oscillating the same, a removable case in said body, and having a number of test-tubes, and a clamping device which clamps said tubes and case against the walls of the churn-body, substantially as described.

3. In a test-churn, the combination, with a removable tube-holding case, of a clamping-plate provided on one side with an interiorly-threaded hub and a swiveling screw-bolt provided with the collar b^4 , and the rigid head b^5 , and adapted to engage with said hub, whereby said clamping-plate may be adjusted as required, substantially as and for the purpose set forth.

4. A test-churn consisting of a box receptacle adapted to have an oscillating movement, a removable case, as described, a number of test-tubes inserted in said case, and a device for clamping said case and tubes against the body of the churn, and a heating reservoir or chamber located below said receptacle, whereby the test-tubes are heated to the required temperature, substantially as and for the purpose set forth.

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